

MBA- FT 2019-21 SUMMER INTERNSHIP PROJECT



PROJECT TITLE:

Research on

Setting up an in-house Logistics Network

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PROJECT DETAILS

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The internship opportunity with Live Sports365 E-Retail Pvt. Ltd. was an amazing opportunity for learning and professional development.

I would like to use this opportunity to express my deepest gratitude and special thanks to my mentor for the project **Mr. Bhavya Jain, Sr. Sales & Operations Manager, Live Sports365 E-Retail Pvt. Ltd.,** who in spite of being extraordinarily busy with his duties, took time out to hear, guide and keep me on the correct path and allowing me to carry out my project at their esteemed organization.

Also, I would like to express my gratitude to **Prof. Tirthank Shah**, the guide for my Summer Internship for his insightful suggestions, encouragement and constant evaluation during my internship.



EXECUTIVE SUMMARY

The report is a research on best practices involved in setting up an in-house logistics network for an organization. Based on primary and secondary research we were able to identify industry standards that can help in designing a state-of-the-art logistics network. The research also includes a study on the leaders in the industry and the technologies that have been adopted as well as technologies being developed that can be implemented in the near future for a high-performance logistics network. The learnings and conclusion part shows the output of the project and the knowledge gained from it. It also shows the insights that we have gained about the logistics industry as a whole.



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I. INTRODUCTION

Live Sports365 Pvt. Ltd. is a multi-channel fitness initiative stemming from collaborations between major sports icons and industry experts from India, offering sports infrastructure solutions to schools, colleges, sports clubs, academies and even businesses. The company also manages <u>www.sports365.in</u>, a sports and fitness portal that offers more than 35,000 products and also acts as a strategic seller in major Indian e-commerce platforms such as Flipkart, Amazon and Snapdeal. Leveraging its multi-channel business plan, Sports365 also operates as an exclusive business partner in areas such as business distribution, planning, customer engagement, and marketing for sports brands such as Christy's (Wimbledon Towels), Hero Cycles, Mueller, Spartan, Unicorn, V22 and many others.

Additionally, the company also manages specialty portals like <u>www.tennis365.in</u>, www.badminton365.in, www.running365.in and www.cycling365.in

Sports365 has customers from the B2C channel as well as B2B channel.

The major customers that the company targets are educational institutions, sports academies, corporate organizations, sports teams and other such institutions for its sports equipment needs. Additionally, the company does cater to the individuals who are looking for sports equipment for their personal use via their e-commerce platforms.

Sports 365 operates in a niche part of the vast e-commerce industry. This niche is the sports equipment and gear for its consumers. There are many players that are operating in the small segment of the e-commerce industry like Khelmart, Sports365, Decathlon, Sporting8, SabkiFitness, SportsKhel.com, Amazon.in, Flipkart, Vinex shop and Yogi sports.

The great convenience of browsing thousands of products without leaving the place, the ease of delivery at home and, of course, the countless payment options, have made online shopping a part of our daily lives.

Fitness and health awareness are an important part of our lives these days and we are in constant need of equipment and accessories to be able to participate in the sporting activities of our choice and to achieve the fitness goals we aim for.



RESEARCH BASED PROJECT

1. OBJECTIVE

Sports365 believes that it can benefit from an in-house logistics network. The company is thus considering to move away from 3PL and setup its own logistics network. The objective as part of my internship project is to identify the following:

- Standard Operating Procedures in the industry
- Operation models being followed by leaders in the industry (E.g. Amazon, UPS, DHL)
- Technology enabled solutions for increased efficiencies, reduced cost and improved experience in service and delivery to the customer.
- New technologies that can be incorporated to ensure that the newly built logistics network is state of the art

Sports365 also aims to leverage the new logistics network as a service to its customer.

II. METHODOLOGY

1. APPROACH

The project work began with formulating a roadmap for 8 weeks as advised by the organization guide, Mr. Bhavya Jain. Below roadmap was finalized. The routine involved submission of progress reports every Monday and Friday followed by a review meeting every Tuesday and Saturday.

- Week 1: Study the basic framework in designing a logistic network
- Week 2: Research the technologies involved in Logistics
- Week 3: Analyze the logistics network of market leaders (Amazon, Flipkart, UPS, DHL)

SHIFTING THE FOCUS ON 3 ETHOS



- Week 4: Focus on practices aimed at increasing efficiencies with the help of technology enabled processes and procedures
- Week 5: Investigate cost reduction techniques for logistics network available in the industry
- Week 6: Analyze technologies and methods for improving customer experience in service delivery
- Week 7: Identify the best practices in the industry for a successful logistics network
- Week 8: Based on the learnings from the research, provide meaningful suggestions and actions for implementation

The data collected is majorly qualitative. The aim is to use the research to identify the best practices and technologies that could be incorporated into the company's logistics network as and when the organization deems it necessary.



2. PROJECT ROADMAP

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The major source of data for the research has been a secondary source. The data has been collected with the help of various secondary sources of data library and online journals. Multiple research papers in the field have been referred to obtain helpful suggestions that can be used in implementation. Furthermore, information on how industry leaders operate was obtained via numerous online documentaries, case studies and interviews carried out by different media houses and personnel. Multiple documentaries on Amazon, DHL and FedEx that were featured on platforms like the Discovery Network, YouTube, LinkedIn and National Geographic channel. Various online blogs managed by leading experts in the industry have also been referred to extract suitable techniques that can be implemented by Sports365.

III. PROJECT DATA

1. FRAMEWORK

The task of designing an adequate logistics network must be closely coordinated with the identification and implementation of the main corporate and global strategies. The six main phases involved in the logistics network design process are as follows:

- Define the logistics network design process.
- Carry out a logistical audit.
- Examine the alternatives of the logistics network.
- Carry out an analysis of the location of the installation.
- Make decisions regarding the location of the network and facilities.
- Develop an implementation plan.

Step 1: Definition of the logistics network design process.

A logistics network re-engineering team must be trained and responsible for all elements of the logistics design process. This team must understand all of the commercial and corporate strategies and the underlying needs of the company and the supply chains in which it participates.

Step 2: Perform the logistics audit

The logistics audit gives members of the reengineering team a complete perspective of the



company's logistics process. It also helps collect essential types of information that will be useful at all future stages of the redesign process. The type of information that should be available after the logistics audit is:

- Customer requirements and key environmental factors
- Key logistics goals and objectives
- Profile of the current logistics network and position of the company in the respective supply chain
- Reference or target values for logistics costs and key performance measurements
- Identification of gaps between current and desired logistics services (both qualitative and quantitative)
- Key objectives for the design of the logistics network, expressed in terms that facilitate measurements

Step 3: Examine the logistics network alternatives

This phase involves the application of quantitative models appropriate to the current logistics system, as well as to the alternative systems and approaches that are taken into account. These models allow to deepen the functioning and the profitability of the different possible networks. Some of the modelling approaches are:

- Optimization
- Simulation
- Heuristic approach.

While optimization approaches seek the "best" solution, simulation models reproduce the operation of the logistics network. The heuristic technique can accept general definitions of problems, but does not provide optimal solutions.



Step 4: Perform an installation location analysis

Once a general configuration of the desired logistics network has been decided, the next task is to carefully analyze the attributes of specific regions and cities for the locations of the logistics structures. This analysis will have both quantitative and qualitative aspects. Quantitative aspects include economic (or cost) factors (for example, land costs, utility costs, labor costs, energy costs of material costs, etc.), while qualitative factors include such considerations. such as attitude at work, transport (or availability) problems, proximity to the market and customers, quality of life, incentives for industrial development, supplier networks and business preferences.

A job selection team is formed which will collect information on specific attributes such as those mentioned above. In addition, this team should be able to examine potential sites in terms of topography, geology and structural design.

Step 5: Make decisions about the location of the network and facilities

In this phase, the network and the specific sites for the recommended logistics structures must be assessed to determine consistency with the design criteria identified in phase n. 1. This step should confirm the types of changes necessary to the company's logistics network and should do so in the context of the overall positioning of the supply chain.

Step 6: Develop an implementation plan

Developing an effective implementation plan is a critical activity. This plan should serve as a useful roadmap for moving from the current logistics network to the desired network. It is important that the company commits the necessary resources to guarantee a quick and smooth implementation.

Deadlines are formulated once the necessary resources are allocated for the completion of the project.



2. TECHNOLOGY

A. Technology in Warehouse management

Goods Receiving and Buffering

In a Typical Fulfilment Centre/ Distribution Centre, the process of goods receiving is one of the most complex processes that starts with Goods Unloading, Quantity and Quality check, Reconciliation with receipt documents such as Advance Shipment Notes, Purchase Orders or Invoices, quantitative binning and put away or cross docking.

Propelled by changing business dynamics such as high SKU proliferation, increased vendor base, non-standard carton sizes, mixed SKU packing, shorter process times, increased Store Returns etc., there is an unprecedented need to put in the right processes and systems at the Inbound Stage.

Automated Solutions help them achieve the desired results at the Goods Receiving Stage and ensures the following benefits for the organizations:

- Fast goods Inwarding
- High speed Quantity verification
- Automated Reconciliation against Receipt documents
- Quantitative Binning for Put Away
- Ability of segregate between Cross Dock, Live replenishment and Put Way material in real time
- Reduce dependency on skilled manpower
- Eliminate Receiving stage errors

> Automated Truck Unloading System

An automated truck unloading system can speed up the unloading process and improve material handling efficiencies.

Reference Link: https://youtu.be/ee4x-iRBG7s



Automated Goods Reconciler

Verifying the received products at a Distribution Centre is one of the most challenging tasks that any warehouse manager has to undergo. Ability to count the actual quantity of products received and reconciling that against the Good Receipt Documents is a task as daunting as any.

Automation solutions can overcome this process in a fast, accurate, reliable, repetitive and transparent manner.

Automated Processes:

- Weight Based Reconciliation
- o 100% Product Scanning Reconciliation
- o Download of ASN/Receipt Data from WMS
- o Input of Carton ID to the system (Manual/ Automatic)
- o Quantity Check (100% Automatic Scanning/ Weight based)
- o Accept/Reject basis the defined Business Logic
- o Run any specific Put Away Logic (such as Quantitative binning) if required
- o Put Away
- o Generate Actual vs Expected Goods Received Report
- o Automated Quantitative Binning System
- Vendor Classification Channels
- o Automated Box/Each Weight and Volume Measurement
- Integrated Imager System

Reference Link: <u>https://youtu.be/_k9yD0f2i_k</u>

Automation Sortation System

With the help of automated sorting systems, the company can benefit in the following ways:

- o Unmatched Price to Throughput Ratio
- Ability to customize as per project requirement
- Short Lead Times
- o IOT connectivity
- Accurate order processing
- High Service Levels



- o Improved process Visibility and tighter controls
- o Increased Worker Productivity
- o Better Preparedness for Seasonal peaks
- o Process Deskilling and improved working conditions for operators

Reference Link: https://youtu.be/zASSVW1rVkw; https://youtu.be/p8RIPfKk0EE

TILT TRAY SORTER



Linear Tilt Tray Perfect for High speed applications in Tight Spaces





Highly Cost Effective Entry Level Sortation Solution for up to 3000 (Single Deck) and Up to 6000 (Dual Deck)

SLIDING SHOE SORTER



Most Versatile Sortation System for Handling High Speed Sortation applications with widely varying product profiles.

PUSHER SORTER



Low Cost Sortation System ideal for low throughput applications

POP UP SORTER



Perfect for Medium Speed and Gentle Sorting Applications for Boxes and Pouches



Loop Tilt Tray Can achieve Ultra High throughput: Upto 28000 Sorts per Hour

DROP DOWN SORTER



Perfect Sorting technology for handling fragile or spineless products such as Bags

ELECTRIC SWEEP SORTER



Our Electric Sweep Sorter has Specifically designed for Industries handling small and light weight products.

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> Sortation system for SKU consolidation

Often warehouses receive the goods in mixed lots and need to Sort them into logical groups or categories before putting them away for storage. These logical categories could be SKUs, Group of SKUs, Physical Attribute such as Size or color or a combination of both, Manufacturing Date, Expiry Date, Batch Number etc.

Manual Segregation of products at receiving stage can be a both time and space consuming exercise and can significantly impact the productivity of the entire warehouse leading to delay in Goods receipt and inventory updation.

Recently, increasing number of organizations have started looking at various options to Automate the Sortation process at the Goods receipt stage that are specially designed to offer high speed and accurate Inbound Sorting capabilities to warehouses.

> Inbound dimension and weight scanning systems

These systems are designed on keeping into account the prevalent shipment size and weights in the Industry so that clients can leverage on a standard plug and play system that offers them high accuracy, reliability, uptime and productivity.

Dimension & Weight Scanning systems can be seamlessly integrated with virtually any host system based on its standard API modules to push accurate data in real time for immediate information availability.

Some of The Use Cases of Dimension and Weight Scanning Systems:

- o Goods Profiling at Inbound for Storage Space Optimization and planning
- o Goods Profiling for Packing size recommendation during packing stage
- o Calculation of Volumetric Weight for Freight reconciliation
- o Profile based Quality check of actual vs expected

Reference Link: <u>https://youtu.be/-8t3oAvxwOg</u>



> Automated Storage & Retrieval Systems (AS/RS)

With increasing size of modern-day fulfilment centers and distribution centers, the ability to Put Away the goods post receiving in quick and reliable manner is becoming a crucial factor that most of the organizations have to struggle with. Inventory can only be made available for Sale and subsequently for picking, once it has reached its designated storage location and thus a quick put away is indispensable to ensure faster Inventory Turn Around.

Similarly, inaccurate put away might lead to Inventory not being available at the desired location during the picking process that might lead to unfulfilled/ delayed customer orders.

To counter these challenges, a range of Automated Storage & Retrieval Systems directed put away solutions that help organizations achieve the goal of Fast and Accurate AS/RS in a smooth, user friendly and cost-efficient manner.

Reference Link: https://youtu.be/ZZuSinlliOQ

Automated Picking System

The process of picking is unarguably the single most critical, Cost-intensive yet difficult process that directly impacts the top line of organizations on a day to day basis. Organizations regularly strive to achieve higher pick rates while trying to sustain the pick rate accuracies amidst the ever-growing customer demand of smaller orders, shorter turnaround time, and spot on order fulfilment accuracy.

Automated picking system can deliver astonishing improvements in picking rates with reduced manpower and higher accuracy.

Reference Link: https://youtu.be/s_27lcvxzMk



Automated Shipping & Dispatch

Companies need to Ship and Dispatch Goods post Order Packaging in a fast and accurate manner to adhere to the strict Turn Around Times demanded by the Customers. Companies often rely on 3rd Party transporters for delivering the goods till the destination. Some companies even have their own fleet for transportation but nonetheless the need for Accurate Route Level Sorting, Manifestation and vehicle Loading is common across the board.

Some of the benefits of Falcon's Automated shipping and dispatch systems:

- o Reduced Dependency on Skilled Manpower
- Higher Dispatch Accuracy
- Increased Space Utilization
- Faster Turn Around Time
- o Increased Dock Utilization

Reference Link: <u>https://youtu.be/QRtsuIVKydQ</u>

B. Technology in Inventory management

There are diverse types of inventory management technology and systems, designed to properly sort, control and act upon information with a company's inventory. The two dominant types of inventory management technologies include manual and automated systems. However, there are additional levels of inventory management in between.

> Automated Inventory Management Technology

Automated systems are designed to be implemented when a business moves thousands or even hundreds of thousands of products and raw materials during its operation. As a result, automated systems rely on tracking and location technologies, such as barcodes, to provide information and manage the flow of goods. In addition, inventory management systems may include the use of automated identification and data acquisition (AIDC) technologies, including radio frequency identification (RFID) chips.

These additional levels of automation lead to better control and management in a system. In fact, RFID is available in two other forms, passive and active AIDC.



Passive requires someone to activate the receiver, but active systems automatically detect and store RFID tags regardless of other activities. As a result, active systems are a superior option, but can be more expensive.

Cloud Computing

Cloud computing is the process of storing and accessing data and programs over the Internet rather than on your computer's hard drive. In fact, the "cloud" is a metaphor for the Internet. There

is no doubt that inventory is one of the most important resources in retail or wholesale. whether medium small. or large. The tricky part is the visibility and monitoring of stocks in real time. It is always a big challenge and a



defined area to refine and update over time. A good way to overcome these major inventory issues is to implement a system that brings all of your data together in one place, accessible in real time and highly secure. As a result, cloud apps replace the very error prone local apps, which can reduce a huge resource cost.

> Omnichannel Inventory Control

A key concern for all professionals in the supply chain is the customer's effort in terms of interaction, participation and purchase of their business. In fact, measuring customer effort is one of the best ways to assess customer satisfaction and understand if you're delivering an exceptional customer experience. Customers generally demand instant quality, quantity and availability, which forces suppliers to deliver high value at average costs. Omnichannel can be defined as multiple channels where customers interact and interact with your business in a consistent manner.



In this way, businesses can know who their customers are and their experiences are consistent across all channels. Therefore, whatever channels their customers use, they can get the same personalized experience. The omnichannel experience allows a company to appear as a single brand through different channels. However, very few organizations have gained effective omnichannel experience. Having an omnichannel business is a serious accomplishment. However, major operational changes and simplified omnichannel inventory control are necessary to succeed.

It is quite tedious to reconcile physical and digital inventories and ensure that inventory data is up to date on all channels. For example: for customers, in addition to availability and access, it is also essential to find parity in prices and discounts between channels. Therefore, an omnichannel inventory control platform becomes a necessity.

C. Technology in Transportation

> Drones for the last mile

Transport drones quickly became part of the modern logistics industry. In realistic terms, it represents the real possibilities of how this technology can be used to positively impact our

industries (and others). UPS recently successfully completed a test on the use of drones as an extension of its trucks, using it as a "central hub" to reach rural areas. Although Amazon has completed its first full instalment of successful drones here in the UK, it is working hard to navigate the recent version of the FAA's drone operating rules. But these rules are very restrictive, so it can take a while before we see drones hovering above our heads every day.

Reference Link: <u>https://youtu.be/WkYKjAugJ0c</u> Reference Link: <u>https://youtu.be/M7KPuwOmlo4</u>



> Vehicle-to-Infrastructure communication (V2I)

This technology enables drivers to receive real-time information on weather, congestion or



accidents and to automatically update routes. The automated parking features will provide suggestions on where to park safely based on driver fatigue, regulatory requirements and traffic conditions. Intelligent traffic signs can also send specific messages, adapted to each type of vehicle.

For example, when a customer submits an order to a manufacturer, the system sends a report



on product availability and shipping times, allowing the manufacturer to optimize its production schedule just in time. Once the goods are available, the shipment will be shipped from the warehouse along a preestablished route. If an accident or heavy traffic prevents the truck from arriving on time, the system can automatically determine a new route and send a new estimated delivery time to the sender and the customer. Given the delay, the system

will calibrate changes in the shipping rate and product cost, if applicable.

> Vehicle-to-vehicle (V2V) communication.

Allowing trucks to communicate automatically with other vehicles (V2V) and infrastructure (V2I) on the road will ultimately improve safety, thereby reducing fatalities and accident rates. The intelligent telematics systems that connect the trucks will share position, speed and direction information, enabling automatic alerts. When integrated with advanced driving technology such as adaptive cruise control, collision avoidance systems and radar, the V2V will also help trucks save fuel in the peloton: (traveling along the road in narrow convoys, close enough) to benefit from reduced aerodynamic drag). This technology saves up to 10% in fuel costs for a platoon of three trucks. Although the first examples of this technology are already arriving on the market, the legal and regulatory status of the team has not yet been resolved before its benefits can be fully realized. Reference Links: <u>https://youtu.be/lpuwG4A56r0</u>



Remote diagnostics

With constant truck condition monitoring, remote diagnostic solutions such as offered by Volvo, Scania or Daimler will allow companies to make repairs faster, develop more efficient maintenance programs and significantly reduce truck downtime. The technology is estimated to extend the life of a truck and reduce maintenance costs by up to 5%. The technology will also provide truck manufacturers with a detailed understanding of how vehicles are used, as well as the ability to control their electronic devices remotely. The appeal to customers is clear: it maximizes truck availability and significant maintenance savings.

> Automated freight matching

Currently 25% of the trucks in circulation are empty. It is one of the most regrettable market inefficiencies in the world, both in terms of money and pollution.

There is no easy way for trucks to find goods. Car manufacturers are notoriously fragmented: once the initial costs have gone down, they cannot easily find costs for their return (return) home.

An industry expert estimates that more than 30 billion worthless kms a year contribute to it, and that alone in the United States. However, various companies today offer an objective, automated cloud-based solution to reduce idling, save transportation costs, provide end-to-end visibility and environmental savings through their freight matching system in real time.

The platform will inform the driver and the fleet administration of the opportunities available to share the transport and an agreement meeting all the specified criteria can be automatically concluded between the truck operator and the transporter.

In the future, trucks will finally be able to determine if they can make additional shipments. The trailer of the truck itself will be able to determine the available space and weight, as well as the planned route, the ETA and other relevant information via sensors and communicate this data to a digital platform freight correspondence.



> Blockchain

Stakeholders should increasingly harness Blockchain technology through logistics and transportation to provide greater transparency and accountability in the management and tracking of documents and resources throughout the supply chain process. Taking advantage of blockchain distributed ledger technology can not only improve service levels by providing end-to-end visibility into the status of each shipment, but also improve rates on time and enable more proactive incident management.

The new applications are already introducing smart contracts using blockchain technology. When a shipping order is placed, a smart contract can be started, delivered and executed quickly if all validations and references are verified.

Reference Link: <u>https://youtu.be/0O2E9bCpKDk</u>





3. STUDYING THE MARKET LEADERS

A. UPS



Based in Atlanta, Georgia, United Parcel Service (UPS) is the largest parcel company in the world. UPS is also a provider of supply chain management solutions worldwide. In more than 220 countries and geographic areas, the company delivers parcels daily on behalf of 18 million shipping customers. UPS serves all addresses in North America. Europe UPS delivered 18.3 million packages and documents in 2015.

UPS is present in all areas of the global logistics market. This market includes contractual logistics, transport, distribution, air transport, land transport, maritime transport, customs brokerage, insurance and financing. The company manages 104,398 packages for motorcycles, vans, tractors and cars, including more than 6,845 non-conventional fuel vehicles. It serves 382 airports in the United States and 346 airports internationally.

In the United States only, UPS has air hubs located in Louisville, Kentucky; California; Philadelphia, Pennsylvania; Ontario; Columbia and Dallas, Texas; South Carolina. In Europe, it has air hubs in Cologne and Bonn in Germany. In the Asia-Pacific region, the company operates via air hubs in Shanghai, Shenzhen and Hong Kong. Miami, Florida is the hub of the Caribbean and Latin America.

UPS has been highly reliant on technology to achieve high levels of efficiency and customer satisfaction.

Key success features:

- **R & D:** UPS invests over a billion dollars in research and development of various technologies like WMS, TMS, Last mile delivery solutions, automation, etc.
- ORION: On Road Integrated Optimization & Navigation is a system which engineers developed in-house. It optimizes driver delivery routes. A typical UPS driver delivers about 120 packages a day. ORION with the help of its smart algorithm optimizes the delivery routes. This has enabled UPS in saving 180 million miles and 10 million gallons of fuel



- **Telematics:** UPS has equipped its delivery trucks with over **200 sensors** which monitor driver and vehicle performance. This data is then used by ORION and other systems in making the process more efficient.
- **WMS:** UPS has been developing a warehouse management system which has been evolving for over a decade now. UPS also partners with various developers in the market to come up with the best warehousing solutions that directly have an effect on the bottom line.
- **Huge Delivery Fleet:** UPS has a huge network of delivery fleet working 24/7 which enables them to deliver at such a high pace. The fleet includes 1,25,000 package cars, vans, delivery motorcycles. Over 23,000 trailers. 550+ jet aircrafts which cover more than 220 countries.

B. FedEx



FedEx Express invented express distribution and is the world leader in the sector, providing fast, reliable and timely delivery to more than 220 countries and territories, connecting markets

representing more than 90% of the world's gross domestic product in 1 to 3 working days. Airway management and unmatched transportation infrastructure, combined with state-of-the-art information technology, make FedEx Express the world's largest express delivery company, providing fast and reliable service for more than 3.6 million shipments.

FedEx has been able to keep the competition on toes with various initiatives in technology enabled operations.

• Aircraft Fleet: FedEx has more aircrafts than Emirates, Etihad and Qatar Airways combined. With over 650 planes travelling to more than 400 destination carrying 6 million packages every single day, it makes them the largest cargo airlines in the world.



• SenseAware: SenseAware is an innovative product that improves the productivity and management of customer supply chains. Designed in 2006 and widely distributed in 2011, SenseAware is a multi-sensor device that tracks and monitors shipments and is combined with a powerful web-based application system that allows the exchange of information between different stakeholders of the value chain. Unlike traditional location and tracking technology in which only designated points along the route are scanned and reported on the spot, the FedEx app uses advanced sensors, GPS functionality and advanced data analysis, providing almost real-time on location, temperature, light exposure, humidity, pressure and driving performance. Using cellular technology via a secure server, information can be viewed in a custom interface, which allows the client to include triggers and alerts.





C. Amazon



Amazon, the largest e-commerce platform in the world. It has been successfully fueling the growth of online shopping and has been creating disruptions in various industries. One of these

industries in the supply chain and logistics. Amazon initially relied on various 3PL like FedEx and UPS but has been gradually developing an in-house supply chain to cut costs and increase efficiency.

With over 243.5 million square feet, if all of Amazon's distribution and manufacturing space were arranged side by side, it would cover a quarter of Manhattan. There are 258 operating structures in the United States and 486 others worldwide.

In the United States, this vast network is defined by a range of different services, from Prime Now centers near urban centers to fresh produce and whole product deliveries, and, of course, to distribution, sorting and delivery stations. Amazon also operates nine inbound transshipment centers, which are used to consolidate or stop imported shipments, and then transfer them to its distribution centers. In 20 other countries, Amazon's other hubs mainly focus on delivery and delivery stations, while some countries such as Italy, the United Kingdom, Germany, France, Spain, Singapore and Japan also have Prime delivery facilities.

- Fulfilment Centers: The key to Amazon's one-day delivery has been their fulfilment centers. With the help of their forecasting algorithm and partnerships with the local resellers, Amazon already has a huge stock of items that the user is expected to purchase. This gives them a head start in delivering the product on the same day and sometimes within a few hours.
- Inventory Management System: Amazon has been developing an in-house IMS with the help of Big Data, Robotics and Automation. They have been highly efficient but secretive about the details of how they have been managing their inventory. Amazon believes their IMS is what keeps them ahead of the competition.



• Warehouse Automation: Amazon has been investing heavily in automating its warehouse operations. The company has been incrementally incorporated its ever-growing army of robots in the warehouses that help in improving efficiencies and enable the warehouse to fulfil more orders per day. The graph clearly shows how the army of robots has grown in



Amazon Robots

numbers for Amazon.

• **Reverse Logistics:** Amazon has been witnessing a serious spike in the number of customers returning a product. The company claims there is probability of 25% that a customer might return the product. The cost of men involved in picking up packages from the customer's doorstep back to the fulfilment centers is a major cost center. Amazon has tackled this by strategic collaborations with various retail stores like Kohl's who have witnessed a drop in footfall. Customers are now asked to visit the nearby retail partner to drop-off the returned product for free or pay a return-fee if they wish for an agent to pick up the product for returns. This process enables Amazon to eliminate the cost of first mile of the reverse logistics.

Reference Link: https://youtu.be/FPPSn-M3JQk



D. Blue Dart Express – DHL



Blue Dart was founded in 1983 by three young entrepreneurs with the idea of delivering small packages and packages to the Indian export sector. It became the first carrier to provide national and international delivery services in real time, then

was made public in 1994. It then obtained government authorization to manage cargo aircraft in the country. Seeing the immense potential of the company, DHL Express Singapore Pte Ltd increased its stake of 81.03% in Blue Dart to become the largest logistics company in the country. It manages dedicated air transport capacity with a fleet of six B-757 merchant ships, managing via express support vehicles and obtaining supplies from more than 35,000 sites. The company takes advantage of its pan-Indian influence thanks to land centers and more than 250 network routes. This extensive infrastructure allows the company to have a competitive advantage over existing national players and new entrants. With a pan-Indian reach, Blue Dart continues to be the preferred logistics partner for catering in Tier II and III cities and to benefit from uniqueness and therefore to order the creation of premium packages (more than 10% compared to others) competitors).

• **Technology:** Blue Dart has been partnering with LOCUS for technology-based solutions related to warehouse automation, transportation management system as well inventory management. This has enabled Blue Dart gain higher operating efficiencies while maintaining lower operational costs.

Reference Link: locus.sh

Wide Network: Blue Dart Express is India's largest package distribution company, with a presence in over 33,739 locations domestically and 220 countries worldwide. It has a market share of 49% in the organized air express business and 13% in the organized surface express business.



IV. LEARNINGS

1. EFFIECIENCY IN LOGISTICS

The degree to which a company is able to successfully maximize the use of its logistics network and infrastructure is the efficiency of its logistics setup. We live in a time where an inefficient logistic network has numerous business implications. Thus, it becomes a top priority for a company to keep on improving the operating efficiency of its logistics network to gain a competitive advantage in a marketplace.

The various ways which can be used to improve the efficiency and achieve a high-performance logistics network are listed below:

- **Standardize:** The first step is to standardize every process that is being carried to move the goods from one end to the other. This involves preparing Standard Operating Procedures (SOPs) for every step of the process. SOPs assist the employees reinforcing their duties at every level and also help the organization in training new recruits. SOPs also play a crucial role when conducting a Root Cause Analysis (RCA) and assist the management in decision making to streamline the process further improving the efficiency of the process being carried out. SOPs should be updated on a timely basis and a knowledge base should be maintained.
- Key Performance Indicator (KPI): We can't improve something we don't measure. It is thus of utmost importance to measure the performance of a logistics network with several KPIs. They help an organization in tracking, monitoring and improving its processes across various levels of the network. Some of the industry standard KPIs that can be used are:





- Shipping Time: On-time delivery services refer to the relationship between orders shipped on the requested shipping date divided by the total number of orders. This is a first logistics KPI that allows you to measure the performance of the supply chain. In fact, if the time interval between the time the customer placed the order and the time the order is ready to ship is too long, this may show some problems in the process that need to be resolved. Whether obsolete planning processes or disconnected execution systems are too slow to keep up with growing demand, problems must be resolved to respond quickly to unexpected events.
- Perfect Order Rate: Another very important logistics measure for supply chain efficiency is the perfect order rate. Measure the number of orders processed, shipped and delivered without incident on your way. The deadlines and delivery times are respected, the order is not bad and the products are not damaged. It is important because it shows the efficiency of the supply chain and delivery services and this naturally leads to more satisfied customers who are ready to return or recommend their services.
- **Transportation Costs:** Average shipping costs calculate a total of the expenses related to the processing of orders from start to finish. You will distribute all the costs related to this logistics KPI according to different categories: order processing, administration, inventory, storage and finally the actual transport costs. After calculating all this, you can assess the percentage represented by each phase of the process and see if it is excessive or within the standards. You can also calculate the cost of transporting a product and see how much an item costs in relation to the amount of revenue it provides.
- Warehousing costs: Warehousing is the management of space and time. Storage costs refer to the money allocated to goods entering or leaving the warehouse. These expenses cover equipment and energy costs, such as ordering, storing and loading goods, as well as the human costs, such as labor, shipping or delivery. Storage costs are a component of another logistics KPI, total transport costs.



Measuring them is not an easy task, but once done, it will facilitate their overall management and add a lot of value, which senior managers or investors will appreciate.

- Number of Shipments: Shipping is not just a matter of shipping products and packages by truck or ship. Shipments are the showcase of your warehouse; their quality and precision in the main order will also testify to the quality of their service. In the same way that you measure the number of orders placed on time for your shipment (KPI for punctual shipment), you can measure the number of orders shipped from your warehouse. Analyzing trends over time will give you an overview of peak times or peak seasons (such as Christmas) and allow you to anticipate and allocate more resources accordingly.
- **Last Mile:** The last mile delivery needs to be carried out with an optimized delivery routes to achieve highly efficient deliveries. This can be done using TMS or technology-based third-party solutions. The simplest solution is to use google maps to create an optimum route for delivery which can be used by the delivery man later. These can also be tracked using live tracker to ensure the driver doesn't deviate from the desired route.
- Automated Sorting System: Sorting packages between different nodes of the supply chain

are one of the most crucial tasks in ensuring the product reaches the desired destination. Automated sorting solutions have proved to increase the number of orders fulfilled from а warehouse by 3-4 times in various cases. There are various technology solution



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providers in India that offer highly efficient automated sorting systems which can be modified as per the business requirements.

- **Optimized Warehouse Layout:** The simplest yet highly effective practice is to optimize your warehouse layout as per the requirement. It is advised that specific areas are dedicated to inbound and outbound packages to ensure smooth flow. Moreover, the location of seasonal inventory should be rotated as per the seasonal demand so that valuable time is saved in loading and unloading.
- Vehicle Maintenance: Another simple, yet highly effective practice is regular and proactive maintenance of the fleet of delivery and long-distance cargo trucks. Numerous organizations have claimed a rise of as much as 10-12% efficiency because of timely maintenance and avoiding potential breakdowns. These breakdowns could not only incur higher repairing costs but also delay the delivery of the packages hampering customer satisfaction.





2. COST REDUCTION TECHNIQUES

Operating a successful and high-performance logistics network can be a costly affair. In a market that is driven by the pressures of tough competition that are able to maintain high levels of customer satisfaction, it becomes difficult to the costs in check while an organization pushes towards faster deliveries. Improving the bottom line in such scenarios can be much easier said than done. Below are a few practices that can help Sports365 in cost reduction while ensuring high levels of customer satisfaction.

Load Planning: Optimizing loading configuration to ensure full utilization of trailer capacity has enabled various organizations in saving 4% - 8% of transportation costs. Planning the loading in such a way that ensures adherence to weight regulations as well trailer capacity can be done either by software solutions or with the help of skilled load planner at every warehouse. Load planning can not only help in saving costs but also ensure safety of the goods and help in damage reduction.



- **Storage Density:** Improved storage density through bins and racks by improving vertical space utilization is smart way to reduce warehousing costs. With a controlled storage density, an organization can certainly get the more out of its limited resources.
- Inter-modal shipping: Most companies avoid using different modes of transport and rely heavily on a single mode of transport throughout the chain. Combinations of road, rail, sea and air transportation can enable a company save heavy on costs by marginally trading-off delivery times. It is thus important to have a continuous evaluation of how fast a shipment needs to travel before choosing the mode of the transport. Iterations and dry runs with various combinations of transport can be performed on routes that observe heavy traffic of moving goods. This can help the company achieve an optimized route that minimizes costs and delivers fastest route options at that price.



• **Cross-Docking:** Organizations that work with Just-in-time inventories can take the benefit of cross-docking and save costs in multiple ways. Cross-docking can help saving time used for sorting, storing and picking. It also helps in avoiding inventory carrying costs as well as labor costs. It also helps in reducing damages which occur during warehousing activities. Cross-docking can be achieved with an integrated Warehouse Management System and Transportation Management System.



• **Backhauling:** A smart way to manage returns is Backhauling. Each truck that completes its trip of deliveries immediately or simultaneously picks up returns on its route. This helps in making reverse logistics more optimized and efficient. With the help of TMS, deliveries and return order pick-ups can be timed so that both of these tasks can be carried out in a single trip saving both time and money.



3. IMPROVING CUSTOMER EXPERIENCE

A logistics company most certainly cannot make the trucks go faster than the speed limit or ships sail faster than their capacity or magically speed up air cargo to ensure that the goods reach their destination at the earliest. These variables are not under the company's control. However, there are a few things that could help in improving the customer experience for a logistics company. Below are a few actions that can help:

- Customer Service: 98% of the logistics companies believe that developing a customer service division has helped them in improving customer experience. Additionally, 55% companies also agree that 24/7 customer service is a bigger challenge than it seems to be. SPEED is the essence here. Faster responses have been directly linked to higher customer satisfaction. Working towards achieving a response under 30 minutes could satisfy 91% of the customers. Studies have shown that a customer understands the delay in shipment if given a reasonable truth but impacts brand image and loyalty if no concrete responses are provided.
- **Customer Feedback:** Customer feedback is a gold mine for companies that are looking to grow through continuous process improvement. Setting up weekly review meetings to work on the positive and negative feedbacks received through the week is area of opportunity to improve the customer experience.
- Green Initiatives: The new generation of consumers have been known to be increasingly conscious about the consequences their actions have on the planet. Consumers now are willing to pay a premium to the companies that take efforts in Reduce, Reuse and Recycle. Waste Management can thus help in improving the customer experience. Letting the consumer know that the company cares about the planet has shown a growth in brand affinity and customer retention. Waste management practices on various steps of the supply chain can help with the bottom line as well. Packaging waste management is one such area



to be explored. Additionally, reusing the packaging by recollecting the packaging material once the shipment is delivered is a practice many companies have started exploring.

• Shipment Visibility: Even though tracking shipment is now a norm in the logistics industry, many companies still look to cut corners in this area since they don't really understand the benefits. The ability to track shipment not only helps the customer but the company as well. An integrated shipment tracking system can help the company in managing the shipments better and detailed tracking updates results in a rich customer experience. The validation of the fact that shipment has made progress gives the customer assurance of the timely delivery and reinforces trust for the company.

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4. BEST PRACTICES

Below are some the best practices that are often missed by many players in the logistics industry.

- Change freight paid to freight collect: It's a simple change that most businesses can do effortlessly. Paid shipping is a common payment method for the transport of incoming goods between shippers. A change to Freight Collect is advantageous; this is where the recipient pays the shipping costs. This may seem counterintuitive but it is important to note that the company that paying immediately to a courier is not necessarily the part ultimately responsible for the cost of transportation. Switching to Freight Collect will give your business control beyond the incoming logistics. Often the actual cost of transportation is hidden in the price of a product, between 4 and 7% of the price total cost. With incoming cost control, you know exact transportation costs and can simplify travel by truck bring it directly to your distribution center, without Another point in the seller's distribution center.
- Using The Right TMS: It has already been mentioned how TMS is important for smooth logistics operation and can reduce transportation costs up to 30%. However, it is even more important to choose the right TMS solution from a plethora of solutions available in the market. Below are a few features to look for when selecting a TMS solution:
 - **Carrier Contract Management:** Ability to manage multiple simultaneous transport relationships, all with different contracts. A TMS will notify you when a contract is concluding, display total shipping costs, help set prices, and follow the terms and agreements in real time. It should always make sure that you and your operators follow the terms of the contract, as well as any special regulations based on location.
 - Shipment Visibility: As many as 67% of the companies implement TMS to improve customer experience and give them the power to track their shipment. TMS can assist in decreasing cycle time and help in achieving greater control over logistical costs.
 - **Business Intelligence:** A TMS will follow and analyses shipping trends. It helps you find the best ways, sellers, emails and methods. You can develop performance



measures and key performance indicators (KPI). TMS analysis will help prevent the future supply chain interruptions, reduce transportation costs and shorten delivery times. Again, significantly improving customer experience.

- Back Office Tasks: A fully integrated TMS accounting saves time by doing paperwork, reduces administrative costs, improves cash flow and completes Bill of Lading (BOL) correctly each time.
- Scalability: Not all versions of TMS are scalable with your business growing. In order for the business plans to grow at any time in the future you need to get scalable software. That way you will not have buy, implement and learn to operate a new one in the future. A highly scalable TMS will grow your business and increases your chances of success when it comes to very complex routing solutions.
- Automation: The new age logistics strategies revolve around reducing manual processes with the help of automation solutions. Manual processes translate into delays and errors while automation translates in speed and accuracy. Other solutions like Software-as-a-Service (SaaS) and other web-based solutions and been helping businesses grow at exponential rates.
- **Supplier Relationships:** An important indicator of success in this sector is the health of supplier relationships. These links must be maintained and cultivated on a continuous basis beyond the conclusion of your contract. The best relationships with suppliers are those with two-way communication between the buyer and the seller. Your goals should include mechanisms to maintain the health of your relationship, continuous improvement and value goals, performance measurement and a platform for conflict resolution.



V. RECOMMENDATIONS

- Customer Service: Sports365 needs to setup a customer service dedicated to its logistics network. As mentioned earlier in the report, parameter that impacts a customer experience the most after speed of delivery is the customer service. A small team preferably working 24/7 that can respond to the customer grievances over multiple modes of communication like phone, mail and website portal should be established.
- 2. Warehouse Management System: WMS is key to an efficiently functioning warehouse. There are numerous players in the Indian markets that provide solutions on Warehouse management and claim that their customers have been able to recover the costs within a year.
- **3.** Last Mile Optimization: Last mile deliveries need to be optimized with route planning before the truck leaves the warehouse for deliveries. This can help Sports365 save on fuel expenses and speed up the delivery trips with route optimization. Additionally, coordinated deliveries on alternate days can be done where the volume is low and trucks have to move with half-load. Sport365 should also consider investing in delivery drone technology as a last-mile solution considering the traffic conditions in majority of metro cities like Bangalore and Delhi.
- 4. Supplier Contracts: It is recommended that Sports365 should negotiate contracts with their suppliers in such a way that enables Sports365 to take charge inbound logistics. This way, the company can save costs involved in moving goods from supplier facilities to the company warehouses. Additionally, taking off the burden of shipping from suppliers provides the company more leverage in negotiating prices for the goods themselves which could be key to compete in the marketplace.



- 5. Automation: Automation is currently giving the higher returns on investment in the industry. With automation solutions for sorting, storing, picking and packaging can give Sports365 the edge in the market. This cutting-edge technology that Sports365 seeks need not be developed in-house. There are several players in the market who have been performing R&D on warehouse automation in India and offer tailor-made solutions delivering exponentially high efficiencies
- 6. Inland Waterways: Sports365 should consider exploring the inland waterways network for one of its logistics channels. Waterways have the potential to reduce costs 8% to 10% and can revolutionize the supply chain landscape in India. Inland waterways have been receiving considerable attention in the recent times as Inland Waterways Authority of India continues coming up with multiple initiatives like the Jal Marg Vikas Project, Sagar Mala Project, Roll-on & Roll-off waterways project, etc.
- 7. Shipment Tracking: The importance of shipment tracking has already been stated in the document. Sports365 currently relies on 3PL and thus tracking shipment highly depends on the provider that the customer comes under. However, with the in-house logistics, customers can now get a uniform experience across the country. Tracking solutions involving GPS tags and RFID should be used to increase the shipment visibility for both the customers and Sports365



VI. REFERENCES

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